UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/973,558	10/09/2001	John C. Lynk	14426ROUS01U	7814

626   7590   06/18/2007
NORTEL NETWORKS LIMITED
3500 CARLING AVENUE
OTTAWA, ON K2H 8E9
CANADA

EXAMINER
LIN, KENNY S

ART UNIT	PAPER NUMBER
2152	

MAIL DATE	DELIVERY MODE
06/18/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

PTOL-90A (Rev. 04/07)

	Application No.	Applicant(s)
Office Action Summary	09/973,558	LYNK ET AL.
	Examiner	Art Unit	
	Kenny Lin	2152	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>08 May 2007</u>.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-10,13-22 and 25-28* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-10, 13-22, 25-28* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

DETAILED ACTION

1.   Claims 1-10, 13-22 and 25-28 are presented for examination. Claims 11-12 and 23-24

are canceled.

Requirement for Information

2.   Applicant and the assignee of this application are required under 37 CFR 1.105 to

provide the following information that the examiner has determined is reasonably necessary to

the examination of this application. **Applicant is required to submit disclosure regarding the**

use of JKLM Indexing Scheme. The information is required to support the description in the

specification in such a way as to enable one skilled in the art to which it pertains, or with which

it is most nearly connected, to make and/or use the invention. The specification stating that the

JKLM indexing scheme is well-known, contradicts with the applicant's statement that JKLM

indexing scheme has not been used commercially.

Claim Rejections - 35 USC § 112

3.   The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making
> and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it
> pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode
> contemplated by the inventor of carrying out his invention.

4.   Claims 1-10, 13-22 and 25-28 are rejected under 35 U.S.C. 112, first paragraph, as failing

to comply with the written description requirement. The claim(s) contains subject matter which

was not described in the specification in such a way as to reasonably convey to one skilled in the

relevant art that the inventor(s), at the time the application was filed, had possession of the

claimed invention. Nowhere in the specification disclosed that the processor is operated

irrespective of traffic data flow rate to process the received logical connection parameters. The

specification is silent regarding whether the operation is processed respective or irrespective to

traffic data flow rate. Nowhere in the specification even mention network traffic. Although the

specification disclosed that the CTPs including all PDH rates and concatenated rates such as

STS-12c, it does not show that the processor is operated irrespective of traffic data flow rate. At

most, the specification showed disclosure for the CTPs to operate irrespective of PDH rates and

STS-12c. The expression "traffic data flow rate" covers a broader range than PDH rates and

STS-N rates (this is admitted by the applicant in page 3 of the remark: "the expression 'traffic

data flow rate' in the rejected claims could be construed to **include** optical data flow rate such as

STS-N rates on a PDH network"). The specification fails to show written descriptions in

supporting the rates outside the ranges of PDH rates and STS-N rates. How is the processors

operating irrespective of the rates other than PDH rates and STS-N rates? How could one of

ordinary skill in the art concludes that the operation is performed irrespective of traffic data flow

rate when the specification fails to disclose this?

Claim Rejections - 35 USC § 103

5.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

6.   Claims 1-5, 8, 10-12, 14, 16-21, and 24-27 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Pitchaikani et al (Pitchaikani), US 6,061,505, in view of Schenkel et al

(Schenkel), US 5,933,416.

7.   Pitchaikani and Schenkel were cited in the previous office action.

8.   As per claims 1 and 17, Pitchaikani taught the invention substantially as claimed

including a processing apparatus arranged to be coupled to a network of nodes linked together by

physical connections (col.4, lines 15-24), the processing apparatus comprising:

   a. A receiver that operates to receive at least one logical connection parameter

       associated with each of at least one port within a plurality of the nodes (col.2,

       lines 25-38, 40-50, col.4, lines 28-32, 43-48, 54-63, col.6, lines 33-35, 40-47:

       connectivity information and station status information);

   b. Said logical connection parameter comprising at least one of a logical connection

       user label, span IP address or logical connection channel information (table I:

       logical address of the device, physical address of the interface, user-friendly name

       of the device, name of the symbol representing the device); and

   c. A processor, coupled to the receiver, that operates irrespective of traffic data flow

       rate to process the received logical connection parameters (col.4, lines 57-65).

9.   Pitchaikani did not specifically teach that the logical connection parameters are processed

in order to predict at least one physical connection between two of the ports within the plurality

of nodes based upon the results of the processing. Schenkel taught that various measures of

similarity can be used to determine the communication path coupling (col.2, lines 7-9, col.3,

lines 66-67, col.4, lines 1-12) where the measurement can be directly from observations made

inside a device that is irrespective of traffic data flow rate such as CPU utilization in the device

(col.3, lines 66-67, col.4, lines 6-7). It would have been obvious to one of ordinary skill in the

art at the time the invention was made to combine the teaching of Pitchaikani and Schenkel

because Schenkel's teaching of processing to measure similarity in the parameters to determine

communication path coupling enables Pitchanikani's system to determine a suitable physical

connection between two similar ports (see Schenkel: col.2, lines 7-14).

10.   As per claim 18, Pitchaikani taught the invention substantially as claimed including a

method of predicting at least one physical connection within a network of nods linked together

by physical connections (col.4, lines 15-24), the method comprising:

      a. Receiving at least one logical connection parameter associated with each of at

          least one port within a plurality of the nodes (col.2, lines 25-27, 31-38, 40-50,

          col.4, lines 28-32, 43-48);

      b. Said logical connection parameter comprising at least one of a logical connection

          user label, span IP address or logical connection channel information (table I:

          logical address of the device, physical address of the interface, user-friendly name

          of the device, name of the symbol representing the device); and

      c. Processing the received logical connection parameters irrespective of traffic data

          flow rate (col.4, lines 57-65).

11.   Pitchaikani did not specifically teach to predict at least one physical connection between

two of the ports within the plurality of nodes based upon the results of the processing. Schenkel

taught that various measures of similarity can be used to determine the communication path

coupling (col.2, lines 7-9, col.3, lines 66-67, col.4, lines 1-12) where the measurement can be

directly from observations made inside a device that is irrespective of traffic data flow rate such

as CPU utilization in the device (col.3, lines 66-67, col.4, lines 6-7). It would have been obvious

to one of ordinary skill in the art at the time the invention was made to combine the teaching of

Pitchaikani and Schenkel because Schenkel's teaching of processing to measure similarity in the

parameters to determine communication path coupling enables Pitchanikani's system to

determine a suitable physical connection between two similar ports (see Schenkel: col.2, lines 7-

14).

12.   As per claim 26, Pitchaikani taught the invention substantially as claimed including a

network comprising:

      a. A plurality of nodes linked together by physical connections (col.4, lines 15-24);

      b. At least one processing apparatus arranged to be coupled to the nodes, the

           processing apparatus operating to received at least one logical connection

           parameter associated with each of at least one port within a plurality of the nodes

           (col.2, lines 25-27, 31-38, 40-50, col.4, lines 15-24, 28-32, 43-48; station 120);

           said logical connection parameter comprising at least one of a logical connection

           user label, span IP address or logical connection channel information (table I:

logical address of the device, physical address of the interface, user-friendly name

of the device, name of the symbol representing the device); and

c. Process the received logical connection parameters irrespective of traffic data

flow rate (col.4, lines 57-65).

13.   Pitchaikani did not specifically teach that the logical connection parameters are processed

in order to predict at least one physical connection between two of the ports within the plurality

of nodes based upon the results of the processing. Schenkel taught that various measures of

similarity can be used to determine the communication path coupling (col.2, lines 7-9, col.3,

lines 66-67, col.4, lines 1-12) where the measurement can be directly from observations made

inside a device that is irrespective of traffic data flow rate such as CPU utilization in the device

(col.3, lines 66-67, col.4, lines 6-7). It would have been obvious to one of ordinary skill in the

art at the time the invention was made to combine the teaching of Pitchaikani and Schenkel

because Schenkel's teaching of processing to measure similarity in the parameters to determine

communication path coupling enables Pitchanikani's system to determine a suitable physical

connection between two similar ports (see Schenkel: col.2, lines 7-14).

14.   As per claims 2 and 19, Pitchaikani and Schenkel taught the invention substantially as

claimed in claims 1 and 18. Schenkel further taught to process the received logical connection

parameters, the processor operates to, for a first one of the two ports, determine at least one most

probable port that the first port is physically connected to, this most probable port being the

second of the two ports (col.2, lines 7-9, col.5, lines 1-26).

15.   As per claims 3 and 20, Pitchaikani and Schenkel taught the invention substantially as

claimed in claims 1 and 18. Schenkel further taught to process the received logical connection

parameters, the processor operates to, for a first one of the two ports, determine a set of most

probable ports that the first port is physically connected to, this set of most probable ports

including the second of the two ports (col.2, lines 7-9, col.5, lines 1-26, col.9, lines 12-18).

16.   As per claims 4 and 21, Pitchaikani and Schenkel taught the invention substantially as

claimed in claims 3 and 20. Schenkel further taught to determine a set of most probable ports

that the first port is physically connected to, the processor operates to determine a port similarity

variable for a plurality of the ports when compared to the first port; and insert all ports that were

determined to have the largest port similarity variable within the set of most probable ports

(col.2, lines 7-9, col.5, lines 1-26, col.9, lines 12-18).

17.   As per claim 5, Pitchaikani and Schenkel taught the invention substantially as claimed in

claim 3. Schenkel further taught that the port similarity variable for each of the ports when

compared to the first port is equal to the number of logical connections that are identical between

the first port and the particular port that the port similarity variable is being determined for

(col.2, lines 7-9, col.5, lines 1-26, col.9, lines 12-18).

18.   As per claim 8, Pitchaikani and Schenkel taught the invention substantially as claimed in

claim 1. Pitchaikani further taught that if there are a plurality of logical connection parameters

associated with each of the at least one ports, the processor selects one or more of the plurality of

logical connection parameters to predict the at least one physical connection (col.4, lines 57-65).

19.   As per claim 10, Pitchaikani and Schenkel taught the invention substantially as claimed

in claim 1. Schenkel further taught to predict at least one physical connection between two of

the ports within the plurality of nodes, the processor operates to predict physical connections

between a plurality of pairs of the plurality of nodes based upon the results of the processing

(col.2, lines 7-9, col.5, lines 1-26, col.9, lines 12-18).

20.   As per claims 14 and 25, Pitchaikani and Schenkel taught the invention substantially as

claimed in claims 1 and 18. Schenkel further taught the processor predicts at least one physical

connection between two of the ports within the plurality of nodes based upon the results of the

processing and based upon known physical connection information with respect to the network

(col.2, lines 7-9, col.5, lines 1-26, col.9, lines 12-18).

21.   As per claims 16 and 27, Pitchaikani and Schenkel taught the invention substantially as

claimed in claims 1 and 26. Pitchaikani further taught to receive at least one logical connection

parameter associated with each of at least one port within a plurality of the nodes, the receiver

operates to receive stored information from a database (col.5, lines 6-25).

22.   Claims 6-7, 9, 13, 15, 22 and 28 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Pitchaikani and Schenkel as applied to claims 1-5, 8, 10-12, 14, 16-21 and 24-

27 above, and further in view of "Official Notice".

23.   As per claims 6, Pitchaikani and Schenkel taught the invention substantially as claimed in

claim 1. Schenkel further taught to process the received logical connection parameters, for a first

one of the two ports, determine a set of most probable ports that the first port is physically

connected to, this set of most probable ports including the second of the two ports (col.2, lines 7-

9, col.5, lines 1-26, col.9, lines 12-18). Pitchaikani and Schenkel did not specifically taught to

sort the ports within the plurality of nodes based upon the number of logical connections at the

ports. However, it is obvious to sort ports to place the ports in specific order. Official Notice is

taken that the concept and advantage of sorting is well known and expected in the art. It would

have been obvious to one of ordinary skill in the art at the time the invention was made to

combine the teachings of Pitchaikani and Schenkel and further sort the ports in a preferable order

to enable easy search and reading of the information.

24.   As per claim 7, Pitchaikani and Schenkel taught the invention substantially as claimed in

claim 6. Schenkel further taught to determine a set of most probable ports that the first port is

physically connected to, the processor operates to determine a port similarity variable for a

plurality of the ports when compared to the first port; and insert all ports that were determined to

have the largest port similarity variable within the set of most probable ports (col.2, lines 7-9,

col.5, lines 1-26, col.9, lines 12-18). Pitchaikani and Schenkel did not specifically teach the

processor to start operating with the port with the largest number of logical connections and

proceeding until a subsequent port would have a number of logical connections less than the

largest port similarity variable already determined. However, it is obvious to place the ports in a

specific order for operation. Official Notice is taken that the limitations narrowed by these

claims are consider obvious and furthermore a matter of design choice. It would have been

obvious to one of ordinary skill in the art at the time the invention was made to combine the

teachings of Pitchaikani and Schenkel and further placing the ports in a specific order of one's

desire for operation in Pitchaikani and Schenkel's system.

25.   As per claim 9, Pitchaikani and Schenkel taught the invention substantially as claimed in

claim 8. Pitchaikani and Schenkel did not specifically teach that the selecting is performed with

a graphical user interface integral to said processor. However, Official Notice is taken that the

concept and advantage of using a graphical user interface for controlling processors is well

known and expected in the art. It would have been obvious to one of ordinary skill in the art at

the time the invention was made to combine the teachings of Pitchaikani and Schenkel and

further provide a GUI for the users of Pitchaikani and Schenkel to control and select the

preferred parameters for operation.

26.   As per claim 13, Pitchaikani and Schenkel taught the invention substantially as claimed

in claim 3. Pitchaikani and Schenkel did not specifically teach that if multiple ports are included

within the set of most probable ports, a span address associated with each port is used to

determine the port with which there is a physical connection. However, Pitchaikani taught to use

identifiers to determine the ports (Table 1). It would have been obvious to one of ordinary skill

in the art at the time the invention was made to combine the teachings of Pitchaikani and

Schenkel and also use span address as identifiers to determine the ports with physical

connections from the physical connection information received (Pitchaikani, col.2, lines 39-50).

27.   As per claim 15, Pitchaikani and Schenkel taught the invention substantially as claimed

in claim 14. Pitchaikani and Schenkel did not specifically teach that the known physically

connection information comprises information generated within an auto discovery procedure.

However, it is obvious to include various types of information in the physical connection

information. Official Notice it taken that the limitations narrowed by these claims are consider

obvious and furthermore a matter of design choice. It would have been obvious to one of

ordinary skill in the art at the time the invention was made to combine the teachings of

Pitchaikani and Schenkel and further include all useful information in the physical connection

information valuable to the users of Pitchaikani and Schenkel's system.

28.   As per claim 22, Pitchaikani and Schenkel taught the invention substantially as claimed

in claim 18. the processing step comprises: for a first one of two ports, determining a port

similarity variable for a plurality of the ports when compared to the first port; and inserting all

ports that were determined to have the largest port similarly variable within a set of most

probable ports that the first port is physically connected to, this set of most probable ports

including the second of the two ports (col.2, lines 7-9, col.5, lines 1-26, col.9, lines 12-18).

Pitchaikani and Schenkel did not specifically taught to sort the ports within the plurality of nodes

based upon the number of logical connections at the ports and start operating with the port with

the largest number of logical connections and proceeding until a subsequent port would have a

number of logical connections less than the largest port similarity variable already determined.

However, it is obvious to sort ports to place the ports in specific order for operation. Official

Notice is taken that the concept and advantage of sorting is well known and expected in the art.

Official Notice is taken that the limitations narrowed by these claims are consider obvious and

furthermore a matter of design choice. It would have been obvious to one of ordinary skill in the

art at the time the invention was made to combine the teachings of Pitchaikani and Schenkel and

further placing the ports in a specific order of one's desire using sorting methods for operation in

Pitchaikani and Schenkel's system.

29.   As per claim 28, Pitchaikani and Schenkel taught the invention substantially as claimed

in claim 26. Pitchaikani and Schenkel did not specifically teach that the network is an optical

network. However, Official Notice is taken that it would have been obvious to apply the

teaching of Pitchaikani and Schenkel to all compatible networks. It would have been obvious to

one of ordinary skill in the art at the time the invention was made to combine the teachings of

Pitchaikani and Schenkel and further implement such teachings to all compatible networks

including optical network.

Response to Arguments

30.   Applicant's arguments filed 5/8/2007 have been fully considered but they are not

persuasive.

31.   In the remark, applicant argued (1) Schenkel teaches a processor that must operate at a

stable traffic monitoring data flow to predict the network topology.

32.   Examiner traverse the arguments:

As to point (1), Schenkel taught that various measures of similarity can be used to determine the

communication path coupling (col.2, lines 7-9, col.3, lines 66-67, col.4, lines 1-12) where the

measurement can be directly from observations made inside a device such as CPU utilization in

the device (col.3, lines 66-67, col.4, lines 6-7). Although the *CPU utilization* is construed in

Schenkel's reference as "traffic", the term "traffic" referring to is contrary to the definition of

"traffic data flow rate". Therefore, Schenkel's measurement is irrespective to traffic data flow

rate. Furthermore, Pitchaikani taught to process the received logical connection parameters

irrespective of traffic data flow rate (col.4, lines 57-65; table I: user label such as symbol

representing the device is not traffic related). Applicant's interpretation regarding Schenkel's

teaching in column 3, lines 50-52 "Should the rates be so low that few intervals record any

activity, more measurements may need to be recorded to reach a certain accuracy of topology

discovery" as that if a stable rate is not achieved, the topology of the network cannot be predicted

is incorrect. Schenkel specifically stated that more measurement **may** need to be recorded **to**

reach a certain accuracy of topology discovery, which does not exclude the prediction of

topology with the use of limited measurements. Schenkel taught in column 3, lines 30-32 that

the "activities" to remain the same for measuring, but not the "rates" of the activities. Thus,

Schenkel reference does not require a stable traffic monitoring data flow rate to predict network topology.

Because Applicants have failed to challenge any of the Examiner's "Official Notices" stated in the previous office action in a proper and reasonably manner, they are now considered as admitted prior art. See MPEP 2144.03

Conclusion

33.   **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

34.   Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kenny Lin whose telephone number is (571) 272-3968. The examiner can normally be reached on 8 AM to 5 PM Tue.-Fri. and every other Monday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Bunjob Jaroenchonwanit can be reached on (571) 272-3913. The fax phone number

for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

ksl
June 11, 2007